



Executive summary

Professional Development & Postdoctoral Affairs (PDPA) was established in 2015 as a University-wide office to serve postdoctoral scholars (postdocs), giving this very important part of our research community a dedicated home on our institutional map. Our mission is to ensure that BU provides a supportive and competitive environment for postdoc training by offering professional development opportunities and advising services to our postdocs and their faculty mentors, capturing and reporting postdoc data, and informing University policy development.

Though understaffed for much of last financial year, we are now fully staffed at 2.0 FTE, our team comprising a Director (Sarah Hokanson) and an Administrative Manager (Kate Baker). In 2015/2016, we advised 116 postdocs, responded to postdoctoral skill needs by offering ten in-person and three online professional development opportunities attended by 175 BU postdocs and 71 BU graduate students, awarded seven travel awards to support postdoctoral presentations at national and international conferences, supported postdoc networking by supplying 67 postdocs with business cards, actively participated in three University committees toward the development of new policies and guidelines, and applied for four sponsored awards to fund new collaborative professional development programs.

In this summary, we summarize the current issues facing postdocs across the United States, describe the demographics of BU's current population of postdocs, highlight our progress in meeting our 2015/2016 strategic goals, and identify our actions toward achieving our 2016/2017 strategic goals.

National context – current issues

Updates to the Fair Labor Standards Act (FLSA)

In 2016, new labor regulations established by the Obama administration will significantly impact our academic community. The Fair Labor Standards Act (FLSA) establishes minimum wage, overtime pay, recordkeeping, and young employment standards affecting employees in the private sector as well as in federal, state, and local governments. On May 18, 2016, the Secretary of Labor updated the overtime regulations of the FLSA, raising the salary threshold required for exemption from overtime pay to \$47,476 as of December 1, 2016. [Guidance for academic institutions](#) developed by the Department of Labor explicitly stated that postdocs are considered professional employees and subject to the new salary threshold.

Our peer institutions across the country are grappling with how best to implement these new changes. Most, including BU, have chosen to raise their minimum postdoc salaries to be at or above the new threshold for overtime pay as of December 1, 2016. However, some are allowing postdocs who make less than the new minimum to become hourly employees eligible for overtime (e.g. Brown University). Though postdocs are appointed as staff, their research often requires them to work long hours similar to the schedules worked by our faculty; limiting their hours worked to 40 hours per week would significantly limit BU's capacity to generate competitive research. Additionally, maintaining a minimum salary that enables this population of employees to be eligible for overtime is not a financially feasible solution for the University or our sponsored research programs. Boston University Human Resources has estimated that



the cost of raising postdoc salaries below the threshold to reach the new minimum would cost approximately \$450,000, but paying that same group overtime hours would cost \$3.2 million. Whether the cost is financial, productivity-related, or in the risk associated with being out of compliance with a federal regulation, classifying postdocs as hourly workers disrupts our academic culture and is a losing proposition for BU's research enterprise.

Though the decision to raise the postdoc minimum is relatively straightforward, developing a cost model for covering the impending salary increase is less so. As most postdocs are funded by sponsored awards in progress that are already negotiated / budgeted, coming up with the funds on the short December 2016 timescale will be challenging for all academic institutions and the laboratories within them. PDPA has developed a working group of Boston-area postdoc offices to share best practices and identify potential funding strategies for the University in the coming weeks.

Emerging advocacy organizations

2016 saw the establishment of two non-profit organizations focused on advocacy related to improving the biomedical research enterprise. Future of Research (FoR), established in 2013 by a group of postdocs in the Boston area (including BU postdoc Sarah Mazzilli), has gained national recognition for empowering junior scientists with knowledge and awareness of the challenges facing the research community in order to better advocate for changes to the scientific enterprise and training pipeline. In addition to symposia organized by postdocs across the United States, FoR actively contributes to policy discussions related to biomedical research with an emphasis on issues that directly affect postdocs. In April 2016, Future of Research received a grant from the Open Philanthropy Project for \$300,000 over two years based upon their efforts to connect science policy to the wider scientific infrastructure. The second non-profit established in 2016 is Rescuing Biomedical Research, founded by Bruce Alberts, Marc Kirschner, Shirley Tilghman, and Harold Varmus. These four leaders in biomedical research wrote a [PNAS publication](#) outlining the current challenges facing the biomedical research enterprise and intend to use Rescuing Biomedical Research as a mechanism to convene key stakeholders across the research and policy communities to address issues that continue to limit research sustainability in the United States.

The Public Affairs Advisory Committee (PAAC) within the American Society for Biochemistry and Molecular Biology (ASBMB) is also beginning to convene discussions related to postdoc training. PAAC organized a summit meeting in spring 2016 to identify actionable steps that will significantly improve the sustainability of biomedical research. This summit was the culmination of a year-long effort to consolidate key recommendations identified in nine separate reports analyzing the biomedical research enterprise (see summary publication [Pickett et al. PNAS 2015](#)). One of the actionable steps identified by the participants in the summit was to promote a single unified title for postdocs to allow for better tracking and data sharing across institutions; the 2014 [National Postdoctoral Association Institutional Policy Report](#) has identified 37 different designations for postdoc positions across their member institutions. Director Hokanson has been invited to join a PAAC-led working group focused on streamlining the way institutions categorize and classify their postdocs.



Who are BU's postdocs?

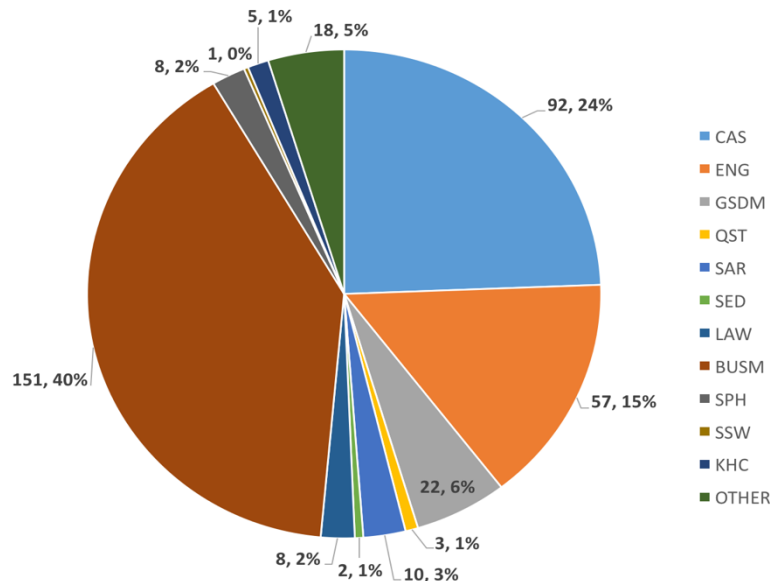


Figure 1: Total postdoc appointments by School / College (number of postdocs, percentage of total).

In the past year, the BU postdoc population changed most notably in its overall size; there was a 20.6% decrease in postdocs, from 475 in 2015 to 377 in 2016. This decrease likely reflects better filtering and more accurate identification of postdocs based on data held in SAP, but may also be an early indicator of the impact of higher postdoc salaries now required by federal law and University policy on a limited research funding environment. Figure 1 displays the breakdown by School/College of postdoc appointments in 2016.

Historically, the Medical Campus has had a slightly greater percentage of the population (56% in 2015), but 2016 saw a shift in this distribution with 47% of postdocs on the Medical Campus, 50% on the Charles River Campus, and 3% off campus or overseas. While still contributing the majority of postdocs at BU, the School of Medicine (BUSM) experienced a small decrease in its overall representation relative to other schools. The College of Arts and Sciences (CAS) and College of Engineering (ENG) also have large percentages of postdocs: their relative representations did not change from the past year. The School of Law (LAW) did not report any postdocs in 2015, but reported 7 (2% of the total postdoc population) in 2016.

Overall, our gender distribution (Figure 2) remained relatively constant, with a slightly higher representation of males in the current year: males comprised 56% in 2016, compared to 51% in 2015. Females comprised 60% or more of the postdoc populations in Questrom School of Business (QST), Sargent College (SAR), LAW, and the School of Public Health (SPH). The greatest disparities in gender were found in ENG,

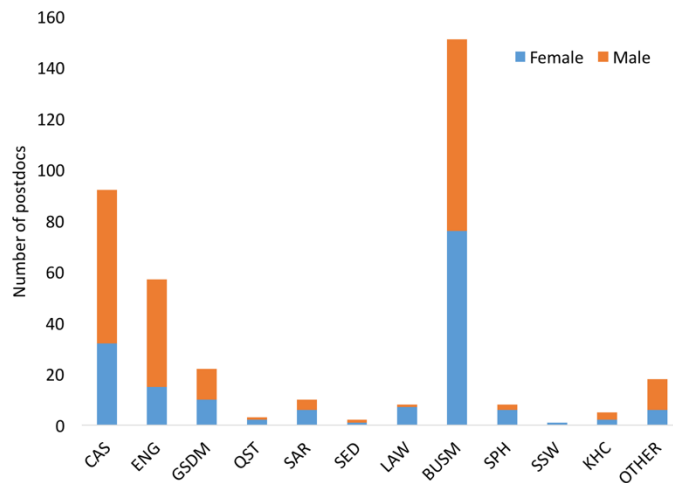


Figure 2: Postdoc gender distribution by School/College



LAW, and SPH. Our population of female postdocs is considerably higher than the national female population (38.5%) reported in the National Science Foundation Survey of Graduate Students and Postdoctorates in Science and Engineering (NSF GSS) in 2014.

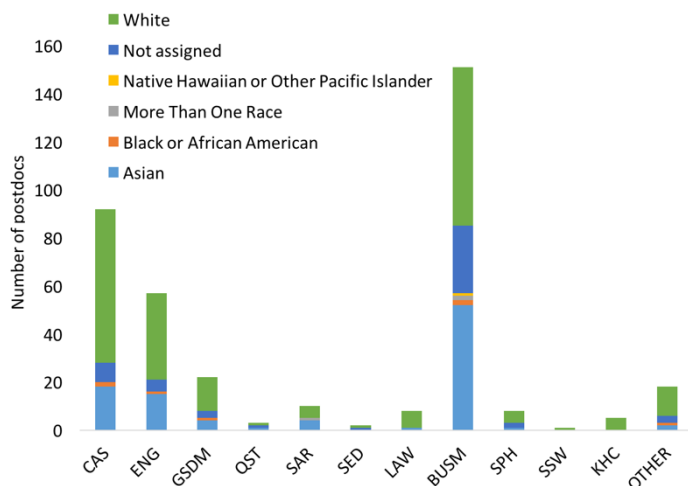


Figure 3: Postdoc racial diversity by School/College.

In 2015, 53% of BU postdocs were international postdocs holding a temporary visa. In 2016, this dropped slightly to 50%, with individuals representing over 40 different countries. Figure 3 represents the racial diversity of postdocs in 2016; the racial distribution by college has changed little since 2015, a fact that holds true for the racial diversity overall. The School of Education (SED) (roughly 1% of the postdoc population) experienced a slight increase in racial minority representation, while the Henry M. Goldman School of Dental Medicine

(SDM) and College of Engineering (ENG) experienced slight decreases. In 2016, 57.6% of all BU postdocs identified as White, and 26% identified as Asian. This academic year did see a slight increase in our overall ethnic diversity of within our postdoc population, with 4.3% identifying as Hispanic or Latino in 2016 compared to 3.8% in 2015. Nationally, there has been a decrease in the overall percentage of underrepresented minority (URM) postdocs, with 5.1% of postdocs reported in the 2014 NSF GSS identifying in a URM category.

Summary of 2015 Strategic Goals and Activities

Our strategic goals in 2015 focused on introducing the new PDPA office to the University community, developing and implementing professional development programs, and influencing the development of new University policies using an evidence-based approach.

Engagement: Increase awareness of and engagement with a newly expanded PDPA.

Our inaugural year focused on outreach aimed at establishing PDPA as the 'go-to' office for all postdoc-related issues and ensuring that faculty and staff understood our mission and the resources available to assist them. PDPA is now a recognizable resource and regularly collaborates with offices and departments across both campuses in an advisory capacity as well as in the development and implementation of joint initiatives. Director Hokanson gave 36 informational seminars in 26 unique departmental or school-level staff/faculty meetings in 2015/2016 to describe our resources and professional development opportunities as well as to provide information on our newly established postdoc policy. Our newsletter averages 34% readership, with 730 current subscribers.



Postdocs now recognize the office as a source of resources and support during their time at BU. In 2015/2016, we advised 116 postdocs, welcomed 175 postdocs to our events, awarded seven travel awards, and supported 67 postdocs to build their networks through providing business cards. A small group of 24 postdocs have also joined together to initiate a postdoc association at BU, which will facilitate regular and structured dialogue between PDPA and the postdoc population and create more mechanisms for postdocs to engage in PDPA's activities. In addition to reaching our postdoc community, we have also successfully integrated the expertise of BU faculty into our professional development programs; in 2016, 19 faculty were involved in co-facilitating our ten in-person events, and nine faculty were involved in reviewing our three travel award cycles.

To position BU as a leader in national postdoc-related conversations, we are also increasing our external outreach. Director Hokanson participated in a panel discussion focused on overcoming the challenges associated with collecting accurate postdoc data during the [Future of Research Symposium](#) in October 2015. She also was named Co-Chair of the Resource Development Committee within the National Postdoctoral Association (NPA) in March 2016. The NPA is a non-profit 501(c)3 educational organization in the United States that is dedicated to enhancing the quality of the postdoctoral experience, and has 180 institutional members whose research efforts are supported by 40,000 postdocs and 2,000 individual members. Largely run by member volunteers, the NPA has specific committees dedicated to serving its mission; the Resource Development Committee works to identify and respond to the resource needs of the postdoc community, including the development of national surveys and content within the NPA website.

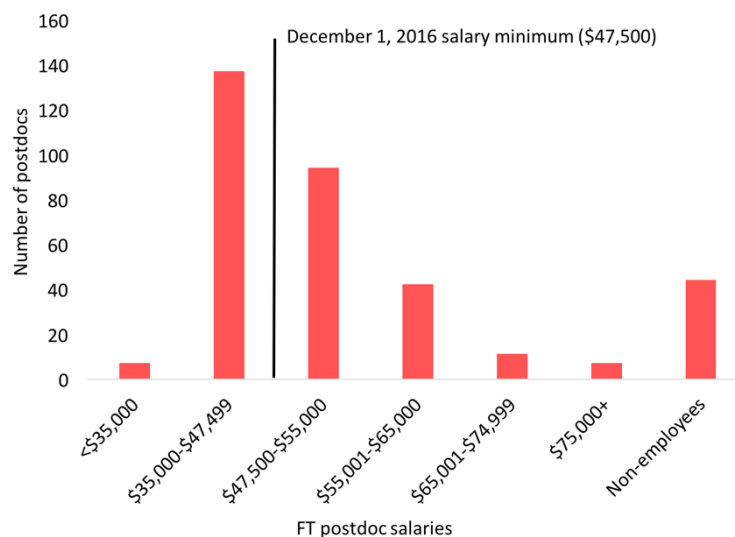


Figure 4: Full-time postdoc salaries as of July 28, 2016. BU has 44 full-time non-employee postdocs paid training stipends that will be adjusted to the new minimum through supplements provided by the National Institutes of Health.

Policies and guidelines: Establish policies and guidelines for postdocs that position BU as a competitive place for postdoc training.

Policy for Postdoctoral Scholars

The Research and Scholarly Activities Committee within Boston University Council developed a policy that defined the postdoc role, creating equity among postdoc appointments across our Schools and Colleges and Research Centers and Institutes. Our [Policy for Postdoctoral Scholars](#) brings BU on par with our peer institutions and reiterates BU's commitment to providing a supportive and productive training environment for our postdoc community.



Implementation of BU's newly established minimum salary for postdocs as of July 1 (\$43,692) was impacted by the updates to the Fair Labor Standards Act (FLSA). Director Hokanson participated in a FLSA Working Group led by Human Resources, and the recommendation to raise the postdoc salary minimum above the new threshold for overtime has been implemented. As of December 1, 2016, all postdocs at BU must earn a salary or a stipend equal to or above \$47,500. We have identified the current postdocs below this new minimum (Figure 4), and are working with University stakeholders to identify the appropriate funding model to bridge the nearly \$450,000 cost to raise their salaries to \$47,500. As the new FLSA overtime rule does not take part-time appointments into account when considering eligibility for overtime (e.g. a 12-month 0.5 FTE postdoc earning \$23,750 would have annualized salary of \$47,500 but would still be eligible for overtime), it is our recommendation that the postdoc job category be limited to 100% effort, 12 month appointments unless a special exception is granted by the Vice President and Associate Provost for Research.

Defining the term limits for postdoc training as part of our new policy ensures that postdoc positions are not careers, and advances postdocs that wish to stay at BU into roles commensurate with their level of experience. In 2015, 24% of our postdocs exceeded five years of service; this year only 7% exceed our new term limit (Figure 5). Nearly half of the postdocs currently in excess of five years of service will finish their appointments in 2016/2017, and we are working with departments to identify more appropriate faculty or staff roles for the remaining postdocs outside of our established term limit.

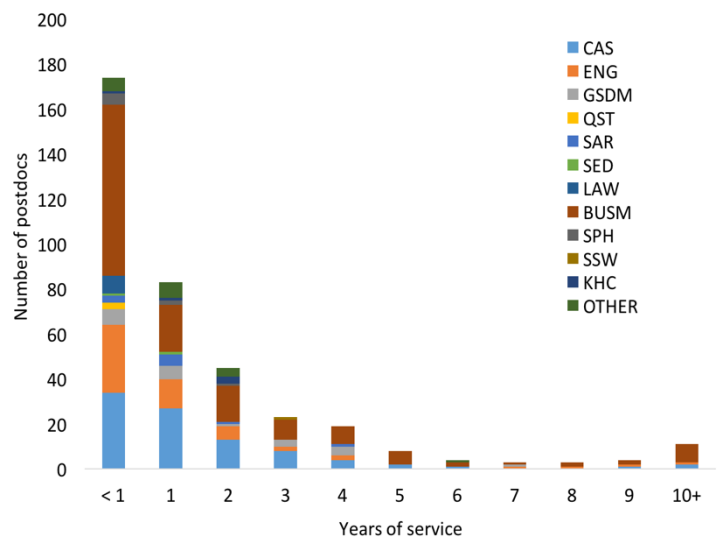


Figure 5: Postdoc years of service by School/College.

The policy also established that the University would provide health insurance for non-employee postdocs. Human Resources worked with Garnett-Powers to develop a health plan similar to the PPO employee offering, with a subsidy bringing the out-of-pocket costs to the non-employee postdocs equal to the employee rates. However, only nine eligible postdocs took advantage of this opportunity, and the Garnett Powers plan required a minimum enrollment (due to regulations within the Affordable Care Act) of 50 postdocs in order to offer our plan successfully. We surveyed the eligible non-employee postdocs (n=63) and received responses from 16. Five of the survey respondents had signed up for the benefits offered, but 11 were not inclined to switch their existing benefits either through the MassHealth Connector or a family member. Providing health coverage to our non-employee postdocs is an important step to ensure that BU remains competitive with our peers, and will eliminate a large inequity between



employee postdocs and those that cannot be classified as employees. Human Resources is providing support for non-employees that need to enroll in MassHealth Connector until they can establish a new option for benefits. We are now exploring the following options: 1) Enrolling non-employee postdocs in our BU student health plan 2) Collaborating with our peer institutions to allow BU non-employee postdocs to enroll in externally offered health plans for non-employee postdocs.

Non-Faculty Academic Research Job Family (ARJF) Task Force

In 2010, a new classification system and set of human resources policies and procedures were developed for the Academic Research Job Family (ARJF). After several years of experience with the existing system, the variety of titles and position descriptions required streamlining, and policies and procedures for appointment, compensation, advancement, performance reviews, and eligibility for accrual of sick and vacation time required review and standardization. In addition, clear guidelines for determining academic privileges was needed for these roles. In March, Director Hokanson co-chaired a Provost-appointed task force composed of faculty and staff with broad representation across the University and the appropriate expertise to develop recommendations on these issues. The Task Force was charged with making recommendations to: 1) Clarify and standardize the position descriptions and classifications for non-faculty research employees, as well as the relevant policies and procedures that are applied to each classification; and 2) Determine the relevant academic privileges for each classification.

In response to the Provost's charge, the Task Force reviewed data and information related to the current Academic Research Job Family structure at BU during eight meetings between March 28 and May 23, 2016. The Task Force examined the current data held within SAP on academic research staff, market research data on academic research positions nationally, as well as the practices of seven of our peer institutions. Discussions focused on distinguishing the classification of positions at BU from research support or research faculty roles, and identifying the specific roles and responsibilities of researchers across both campuses. The Task Force also considered what academic responsibilities these roles should have, such as developing proposals, teaching, and formally supervising undergraduate or graduate students. As the Task Force developed and finalized their recommended classifications and considered the policy implications, they consulted with stakeholders across the University, including University leadership, faculty, administrative staff, and members of the current job family themselves (primarily postdoctoral scholars). The Task Force built their recommendations on the following principles – academic responsibilities and privileges outside of research are characteristic of faculty appointments rather than staff positions; the Non-Faculty Research Job Family should not include jobs that support, rather than conduct, research as their primary responsibility; all of the positions within this Job Family should be compensated; and criteria that distinguish the different types of positions contributing to research and research-related scholarship should be related to the responsibilities of that specific role. The Task Force submitted the following recommendations on May 28, 2016:



Recommendation 1. Consolidate the twelve overlapping roles within the current Academic Research Job Family into four distinct positions to create the Non-Faculty Research Job Family (Table 1).

Table 1: Proposed Non-Faculty Research Job Family

	Researcher	Postdoctoral Scholar	Research Scholar	Senior Research Scholar
Degree requirement?	Yes – BA/BS or MA/MS or equivalent	Yes – doctorate or equivalent	Yes – doctorate or equivalent	Yes – doctorate or equivalent
Being trained?	No	Yes	No	No
Experience requirement?	No	No	No	Yes
Salary minimum	No	Yes – set annually	Yes – graded depending on degree & experience	Yes – graded depending on degree & experience
Term limit	Yes - renewal required annually up to 5 years	Yes – 5 years	Yes - appointments up to 5 years, term limit 10 years	No

Recommendation 2. Academic responsibilities outside of research should not be granted to these positions automatically, but staff in these roles may request the privileges appropriate for their role within the University.

Recommendation 3. Establish a new University policy through the Research and Scholarly Activities Committee within Boston University Council that will:

- Set a minimum salary for all PhD researchers no less than the minimum set annually for postdoctoral scholars;
- Establish renewal restrictions and term limits as outlined in the table above;
- Review vacation and sick time accrual for positions within this job family.

Professional Development: Develop and implement high-quality professional development opportunities; expand resources for postdocs at BU.

Our model for providing professional development is a balanced approach including both programming and new services, and our weekly newsletter advertises all of the professional development opportunities open to postdocs across the University. In 2015/2016 we continued the business card program launched in the prior financial year and launched a travel award program to support postdoc presentations at scientific conferences. We provided business cards to 67 postdocs and funded seven travel awards last year.

The programming that we provide is focused on skills, specifically on the core competencies identified by the NPA as being important for all postdocs – discipline-specific knowledge, research skill development, communication skills, professionalism, and leadership and



management skills. We offered ten in-person and three online professional development opportunities in 2015/2016 attended by 175 BU postdocs and 71 BU graduate students.

Part of the success of our programming relies upon our partnerships with external organizations to enhance our content and maximize our resources. We continue to partner with the Novartis Institutes of BioMedical Research (NIBR) to offer their Drug Discovery & Development (D3) Simulation to graduate students and postdocs. This short course allows nine participants to develop an understanding of drug discovery and development and gain exposure to the scientific strategies deployed by a pharmaceutical company. Three postdoc participants in this program have successfully transitioned into industrial careers, citing this course as a major contributor to their success, both in identifying industry as the right career path for them and as a preparation for job interviews.

A major partner for our professional development offerings is the Center for the Integration of Research, Teaching, and Learning (CIRTL) Network, an alliance of 47 member institutions committed to the training of future faculty. This partnership raises the visibility of PDPA's work, enables us to reach a more diverse audience than we would within our local BU community, incorporate best practices from peer institutions, and develop long standing research-focused collaborations to improve the quality of professional development provided to graduate students and postdocs across the United States. In 2015/2016, Director Hokanson co-developed and co-facilitated three workshops with CIRTL faculty partners, reaching an audience of nine BU and 123 external participants.

We are beginning to assess the impact of our professional development workshops on postdoc skill development and their perceptions of their training experience. Our initial assessment tools relied on pre- and post-workshop survey instruments as a primary data source, with questions that focused both on collecting information that would drive process and on improving program offerings. Our process questions focused on pedagogical elements and implementation of our active learning workshop framework, and our programmatic questions asked participants to self-report their grasp of the learning goals as well as their perceptions and practices related to of IDP process and career-related conversations with their mentors. Figure 6 displays data collected from BU graduate students and postdocs that participated in our blended active learning workshop (pre-session online, in-person workshop session) called *Creating and Owning Your Individual Development Plan (IDP)*.

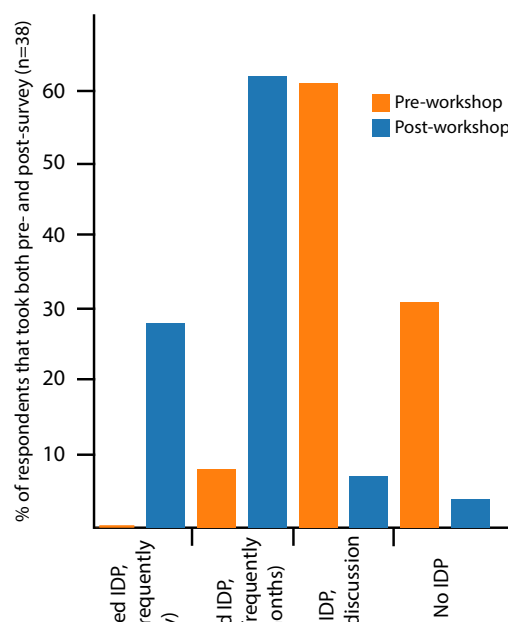


Figure 6: Data collected from BU participants pre-workshop and post-workshop. Question: Do you have a completed IDP, and if so, how frequently do you discuss it with your mentor?



Surveys completed before the in-person workshop and six months after participation indicate that our programming changed participants' behavior as a result of what they learned, incorporating IDPs into their conversations with their advisor.

Proposals

Director Hokanson submitted four collaborative proposals in 2015/2016 focused on creating new professional development programs. A summary of PDPA submitted proposals can be found in Table 2.

Table 2: PDPA Grant submissions FY 2015/2016

Funding source	Mechanism	Title	Collaborators	Award amount	Status
National Institutes of Health	R25 Innovative Programs in Education, Research and Training (IPERT)	Digital Postdoctoral Development Program	Bennett Goldberg (multi-PI); Rique Campa and Tony Nunez (Michigan State University, co-I); Jennifer Hobbs and Bill Miller (Northwestern University, co-I)	\$2,236,010	Reviewed - scored 49; Unlikely to be funded this round
Burroughs Wellcome Fund	Career Guidance for Trainees	Digitally Advancing Postdoctoral Professional Development	Bennett Goldberg (multi-PI) and Rique Campa (Michigan State University, co-I)	\$47,061	Reviewed - not funded
National Science Foundation	DCL 16067 - Improving Graduate Student Preparedness for the Workforce	Preparing Boston University Graduate Students for the STEM Workforce (NSF GRFP Supplement)	W. Jeffrey Hughes (PI of NSF GRFP)	\$51,299	Pending review
National Science Foundation	Alliances for Graduate Education and the Professoriate (AGEP)	AGEP Transformation Alliance: CIRTl AGEP – Inclusive Excellence and Improved Climate for Future Faculty	10 institutions within the CIRTl Network - Iowa State (lead), Michigan State (evaluation lead), Boston University (sub-lead), University of Maryland - Baltimore County (sub-lead), Northwestern University, Cornell University, University of Georgia, University of Texas - Arlington, Howard University, and University of Buffalo	\$173,790 (Boston University portion)	Recommended for award

Our AGEP Transformation Alliance: *CIRTl AGEP – Inclusive Excellence and Improved Climate for Future Faculty* proposal to the National Science Foundation (\$173,790 over five years) focused on developing a culture of inclusive excellence to retain under-represented postdocs in the faculty pipeline, and has been recommended for award as of July 28, 2016. Three of the proposals sought to apply our model for active learning workshops created with former BU STEM Education Initiatives Director Bennett Goldberg (now Assistant Provost for Learning and Teaching at Northwestern University) towards building postdoctoral skills identified by the National Postdoctoral Association as being critical for later-stage career success. We have



entitled this initiative 'The Postdoc Academy' and have received an internal seed grant from the Office of the Vice President and Associate Provost for Research to develop pilot modules and collect preliminary data toward the submission of new proposals to expand this program.

Data: Benchmark the BU postdoc experience to training environments across the country.

BU participated in a national postdoc survey developed by the University of Chicago in lieu of administering a local survey this year. Over 7,000 postdocs across the United States participated in the survey, which closed August 31, 2016. Survey questions covered a range of topics, including postdoc demographic information, cost of living / personal responsibilities, perceptions of their training experience, perceptions of their training environment, and current career aspirations. BU will be provided with our institution-specific responses as well as comparison data from our local and national peer institutions in fall 2016, providing an opportunity to benchmark our successes and challenges to a national context. Summary results will be distributed to key University stakeholders to identify our action steps based on the data collected.

Projected Activities for 2016/2017

Our strategic goals and projected activities in 2016/2017 will expand the services and resources we provide, and position PDPA as a leader within the University community and the postdoc community at large.

Engagement

Goal 1: Position BU as a key convener and leader in local and national postdoc conversations.

Director Hokanson will continue to increase PDPA's outreach efforts to ensure that BU shapes local and national conversations on issues related to postdocs. In September 2016, PDPA will begin hosting quarterly meetings of Boston-area postdoc offices to facilitate more collaboration between institutions and better dissemination of best practices. The first meeting will cover coordination of professional development opportunities and information sharing between institutions as well as between postdoc offices and postdoc associations.

In her role as Co-Chair, Director Hokanson will direct the strategic goals of the NPA Resource Development Committee for 2016/2017, with a focus on developing a faculty mentoring toolkit for the NPA website. In addition to her work in the NPA, Director Hokanson has also been nominated to serve on the American Association of Medical Colleges (AAMC) Graduate Research, Education, and Training (GREAT) Group Steering Committee representing the Postdoctoral Leaders Section. If selected, Hokanson would serve a three-year term and contribute advice on issues related to graduate and postdoc training.

Goal 2: Launch new professional development resources for faculty.

In collaboration with the Office of the Ombudsman and the Office of General Counsel, PDPA is developing resources and training for faculty around effective management practices. Our offices collectively manage and resolve complicated situations between faculty and postdocs, and common themes have emerged as we continue to collaborate to ensure successful outcomes and mitigate University risk. This training will cover recruitment and hiring practices,



provide onboarding resources to create mutual expectations, outline the steps for successful performance management, and identify the necessary actions to terminate research staff positions.

Though our goals are to provide additional training and resources for faculty, streamline the mentoring process, and raise faculty awareness of potential challenges they may face as they supervise research staff, we also hope that these training sessions will increase faculty engagement with our offices, promoting PDPA's work to the wider University community.

Policies and Guidelines

Goal 1: Create more equality in non-employee and employee postdoc appointments through finalizing health insurance coverage and discounted MBTA passes for non-employee postdocs. Our Policy for Postdoctoral Scholars was an important step in beginning to eliminate inequities between employee and non-employee postdocs at BU. However, it is important that we continue to bridge the differences in benefits offered to these two categories of postdocs in collaboration with Human Resources during 2016/2017.

Health coverage for non-employee postdocs remains unresolved, with Human Resources providing interim support for postdocs needing to enroll in health coverage through the MassHealth Connector. PDPA will work with HR to pursue both of our best viable options for providing health benefits for non-employee postdocs, with the goal of offering a new option for health coverage in early 2017.

In summer 2016, Human Resources announced that discounted MBTA passes will now be offered to all University employees. Unfortunately, because MBTA passes are deducted from payroll pre-tax and the subsidy is generated from our fringe benefits pool, non-employee postdocs cannot enroll in this program (or even receive full-price MBTA passes through BU). The lack of this benefit is another penalty / disincentive for postdocs on training fellowships, and PDPA is working with Human Resources to identify ways we could offer this benefit to non-employee postdocs in the future.

Goal 2: Centralize and streamline postdoc appointment process.

The mission of the Office of the Vice President and Associate Provost for Research is to build BU's capacity to do research, including providing streamlined support services that enable the faculty to focus on the scholarship required to develop competitive research programs. In 2016/2017, PDPA will contribute to this mission by centralizing the postdoc appointment process as a service to departments and faculty. Centralizing postdoc appointments offers several advantages: PDPA will provide customized recruitment support to departments to enable wide advertisement of open positions to the right discipline-specific audience; PDPA oversight of postdoc offer letters will ensure all appointments comply with University policy as well as the new FLSA overtime regulations; and initiating the hiring process will enable PDPA to interact with postdocs before their arrival at BU, answering their questions and ensuring a smooth transition into their new position. PDPA is piloting this initiative in the School of Medicine throughout fall 2016 to assess the resources required to launch a University-wide



appointment process and will submit recommendations to the Vice President and Associate Provost for Research.

Goal 3: Review postdoc vacation and sick time policies.

Employee postdocs are eligible to accrue vacation and sick time in accordance with the BU Employee Handbook. Though postdocs are encouraged to take vacation and sick time as needed, due to the intensive nature of their work, a substantial fraction of our postdocs accrue significant amounts of vacation and sick time during their employment. University policy requires that accrued vacation time is paid to the employee upon the termination of their appointment; in 2015, postdocs represented 10% of the University's total vacation payout cost. Paying postdocs for accrued vacation time is problematic for sponsored award budgets, as vacation time is not explicitly included in the salary lines associated with a given postdoc.

Appendix 1 presents the practices of our peer institutions; many have eliminated postdoc vacation accrual toward a "use it or lose it" policy. It is our recommendation that the Research and Scholarly Activities Committee review vacation and sick time accrual for all research staff, including postdocs, as they develop a new policy that builds upon the ARJF Task Force recommendations.

Professional Development

Goal 1: Launch new initiative focused on inclusive excellence.

We anticipate that our NSF AGEP proposal will be funded as of October 1, 2016. Director Hokanson will be the local PI of a major initiative to improve the climate for under-represented (UR) graduate students and postdocs, increasing their interest in and preparation for faculty careers by improving their sense of belonging within our community. This work will be done in collaboration with nine members of the CIRTl Network; collectively the partners within our AGEP alliance enroll 970 UR PhD students, employ 100 UR postdocs, and confer 150 PhD degrees each year, and will disseminate the outputs of our work across the CIRTl Network to achieve the AGEP's mission of building a more diverse community of STEM faculty.

To tackle this complex, multifaceted problem of inclusive climate, we will form a Networked Improvement Community (NIC) to undertake coordinated initiatives to towards inclusive excellence. PI Hokanson / BU is the lead for faculty and postdoc initiatives, with the goal of improving faculty advising as well as the mentoring provided by postdocs, who spend considerable day-to-day time with graduate students. The NIC will also develop and test initiatives on building an inclusive community amongst graduate students. Each university will use common measures to assess and improve the effectiveness of these initiatives in intentional cycles. The cycles of the NIC naturally embed research through annual measurements on the climate experienced by students and postdocs, the quality of advising, and the value students/postdocs place on different aspects of faculty careers. We will use these data to explore the impact of our local climates (and our initiatives) on UR student/postdoc interest in faculty careers. Research will complement quantitative measures with in-depth qualitative focus groups to understand participants' sense of belonging and the factors that have impacted their career choices. At the end of these cycles, the effort will produce a model



set of initiatives for faculty advisors, postdoc mentors, and graduate student peers that have been tested at nine diverse universities and strengthen UR student and postdoc interest in faculty careers.

As a result of our five-year program, current faculty who have participated in the initiative will be more effective in advising a broader range of students. With a strengthened interest in faculty careers, UR students and postdocs will be more motivated to allocate time for professional development activities geared toward preparing them for the full range of required tasks of a faculty member, and we will collect rates of UR student and postdoc participation in local as well as CIRTl professional development opportunities over the lifetime of the award. The research team will also track the career paths of UR PhD students after graduation, as well as the subsequent positions of UR postdocs.

As part of this alliance, PDPA will develop and test several new programs. We will provide annual \$5000 seed funding awards to allow STEM departments to pilot small-scale initiatives aimed at fostering inclusive excellence. Results from these pilot programs will be presented at an annual Inclusive Excellence Symposium, an event we hope will be coordinated with the efforts of the Task Force on Diversity and the Office of the Provost. We will also develop a series of workshops focused on retaining and advancing graduate students and postdocs through bias literacy, providing tools and resources for students and postdocs that encounter bias during their training and teaching them behavioral strategies to become inclusive leaders in their disciplines.

Goal 2: Develop and launch Postdoc Academy pilot initiative; compete successfully for external funding to expand the program.

With seed money provided by the Office of the Vice President and Associate Provost for Research, PDPA will develop and launch a *Postdoc Academy* professional development initiative in collaboration with Northwestern University and Michigan State University. We will develop and pilot a digital postdoc professional development program rooted in the best practices of active learning to make professional development more accessible and more successful in advancing postdoc career skills. The need for a digital training approach is driven by the challenge of engaging postdocs in professional development - postdocs begin their training at different skill levels with different needs, and they have significant time constraints due to their heavy workloads and personal responsibilities outside of their training. Faculty perceptions of professional development for postdocs can also vary, with many advisors associating postdoc success with traditional research productivity measures rather than their overall skill development, causing postdocs to deprioritize professional development opportunities.

The work of this pilot program will build five active learning workshops with the goal of securing large scale funding to support the development of a Massive Open Online Course (MOOC) that will advance postdocs' transferable skills and improve their employment options and career outcomes in the wider STEM workforce. All materials will be freely accessible to peer institutions across the CIRTl Network to expand the reach of our pilot, as well as foster collaboration and build a community in postdoctoral training among research institutions.



Assessments are integral to this project and the data we collect will enable us to implement effective content, produce scholarship that develops standards for and informs postdoc professional development, and direct the expansion of the program in the longer term.

Goal 3: Collaborate on a course designed to build the skills graduate students will need post-graduation, either for their postdoc or desired career path.

Research demonstrates that providing graduate students with the tools, resources, and mentoring needed for career success before they transition into the workforce allows PhD students to conceptualize and develop the wide range of skills necessary to achieve their goals. Career development tools have proven to be successful in helping guide graduate students to successful career outcomes. Trainees who develop and implement strategies as early as possible to pursue career-specific goals report greater career satisfaction overall and rate themselves as more successful than their peers. They also achieve more successes during their career, as measured by their job responsibilities, salaries, and promotions.

As PDPA continues to grow and expand, we recognize that we are well-positioned to help departments prepare their graduate students for postdoc positions or their careers more generally. We have identified transferrable skills that all graduate students should be proficient in based on the national literature on graduate education, expectations for postdoctoral skill development, as well as workforce data detailing skills required for career success. In collaboration with Professor Anna Swan in Electrical and Computer Engineering (ECE), Director Hokanson is developing and piloting a new course in fall 2016 that will provide ECE graduate students with a framework for them to develop the skills that they will need to achieve their desired long-term career trajectory. We anticipate that once initial course assessments have been completed, the course materials will be able to be refined and disseminated to STEM departments across BU as an additional training resource for graduate students.

Goal 4: Work collaboratively with faculty and staff at BU, UMass Lowell, and Middlesex Community College to develop a collaborative postdoc training program.

It is critical for the next generation of faculty to be inspired educators, experts in cutting-edge research fields, and advocates excited about creating inclusive learning environments. To prepare this class of faculty, postdocs need mentors and training experiences that will reinforce the importance of inclusion in the scientific process in both classroom and laboratory environments. BU, UMass Lowell, and Middlesex Community College are in discussions to develop a pilot postdoc training program to provide an opportunity for postdocs with a strong interest in teaching to complement rigorous research training with intensive training in teaching, preparing for their future as independent investigators in academia. This program is in exploratory stages and would build upon and strengthen the research bridges that already exist between BU and UMass Lowell. We expect that if launched, the outputs from this pilot would contribute to a National Institutes of Health Institutional Research and Academic Career Development Award (IRACDA) application in September 2017. Our goals for this program are: to provide postdocs with intensive training and experience in teaching, enabling them to develop courses inclusive to a diverse population of students; to promote new research opportunities between BU and UMass Lowell through establishing joint mentoring and research



programs; and to integrate a robust professional development program to ensure postdoctoral skill development in areas critical for their success as future faculty.

Director Hokanson is collaborating with Dr. Andrew Henderson, Assistant Dean of Graduate Medical Sciences at BU, Dr. Matthew Nugent, the Chair of Biology at UMass Lowell, and Dean Katherine Sweeney at Middlesex Community College on the development of this initiative. PDPA will lead the development of new BU-based professional development initiatives to support postdoc skill growth throughout their research and teaching experiences as part of this program.

Goal 4: Establish a funding mechanism to expand postdocs' research skills.

An important aspect of postdoc training is the opportunity to learn new research skills and techniques. As BU postdocs span disciplines from the humanities to clinical research, PDPA does not have the broad-scale expertise to provide research-based training for postdocs; however, we can provide resources to facilitate opportunities for postdocs to build their skills. We have developed a pilot program in collaboration with the Interdisciplinary Biomedical Research Office (IBRO) to provide up to \$5,000 in seed funding for postdocs wishing to learn new biomedical techniques outside of their disciplines. In addition to supporting a postdoc's skill development, this funding call also provides an opportunity for all biomedical postdocs to practice and receive feedback on their grant writing skills.

Data

Goal 1: Collect second Postdoctoral Experiences Survey to as a measure of PDPA impact post-expansion.

In 2015, PDPA partnered with BU's BEST Program to administer a Postdoctoral Experiences Survey to understand the needs and interests of postdocs across both campuses as we expanded our programs and services, as well as to inform the development of new University policies. Administrative Manager Baker will work with the evaluation team within BU's BEST Program to redesign this survey for data collection in spring 2017 in order to evaluate the changes in the postdoc experience at BU since PDPA was expanded in 2015.

Conclusions

Since its expansion, PDPA has established itself as the 'go-to' office for postdoc related issues at BU, providing services and resources to postdocs, their faculty mentors, and research support staff. We have built a network of partnerships within the University and we will leverage these connections toward the development of new services and programs in the coming year. We expect by the end of 2016/2017 that PDPA will be a recognized leader within the national community of postdoc offices, both in establishing policies that create a supportive postdoc training environment at BU and developing cutting edge professional development programs that build postdocs' transferable skills toward their successful transition into the workforce.